a2 cont'd.

projecting section being a section where the magnetic flux easily passes through, and to be called d-axis hereinafter).

Page 3, line 26, to page 4, line 5, please amend the paragraph to read as follows:

As a result of this, the magnetic flux which leaks to the recess portion of teeth, which is an in-between of magnetic poles, is increased, (the recess section being a section where the magnetic flux does not easily pass through, and to be called q-axis hereinafter) and therefore a significant magnetic flux is decreased, thereby lowering the output.

Page 12, lines 22-24, please amend the paragraph to read as follows:

a3

FIGS. 3A and 3B are cross sectional views showing an example of the structure in detail of a rotor shown in FIG. 2;

Page 16, lines 22-26, please amend the paragraph to read as follows:

a4

FIG. 5 is a dependency characteristic diagram illustrating a correlation between the torque and $PL/2\pi RW_{qave}$ when an analysis is carried out on a model designed by conditions that the number of poles is 8 and the radius of the rotor 10 is 0.08 [m].

Page 17, line 26, to page 18, line 6, please amend the paragraph to read as follows:

a5

With a design having a large value in $PL/2\pi RW_{qave}$, it is considered that there are a great number of poles, the radius is small, W_{qave} [m] indicates the average thickness of the rotor iron core 4 on an outer side in a radial direction of the rotor with respect to cavities 5 arranged in a q-axis direction is small, and the width in a circumferential direction of the cavities 5 is wide.

Page 19, lines 16-20, please amend the paragraph to read as follows:

a6

In the above-described embodiment (the structure shown in FIG. 3A), it is also possible that the width of the cavities 5 arranged in the q-axis direction are made to increase towards the center of the q-axis direction (see FIG. 3B).

Page 30, lines 2-10, please amend the paragraph to read as follows:

a7

FIG. 10 is a cross sectional diagram showing an enlarged view of a part of a stator 1 in the permanent magnet type reluctance electric motor according to the embodiment of the present invention, and in this figure, similar structural elements to those shown in FIGS. 2 and 3 are designated by the same reference numerals, the description of which will not be repeated here. Thus, only different sections from those already described will now be explained.

Page 30, lines 11-16, please amend the paragraph to read as follows:

As shown in FIG. 10, the stator 1 of the permanent magnet type reluctance electric motor according to this embodiment, is formed to satisfy a relationship of: $0.45 \leqq W_t / \tau \leqq 0.8$, where z [m] indicates the pitch of the slot and W_t [m] indicates the width of the teeth (stator iron core teeth width).

Page 30, lines 17-22, please amend the paragraph to read as follows:

Next, in the permanent magnet type reluctance electric motor having the above-described embodiment according to the embodiment of the present invention, the stator 1 satisfies a relationship of: $0.45 \leqq W_t/\tau \leqq 0.8$. With this structure, a high torque can be obtained.

Page 31, lines 14-23, please amend the paragraph to read as follows:

a8

That is, the teeth width W_t becomes narrow, the magnetic saturation occurs at a teeth site, thus increasing the magnetic reluctance of the teeth. Therefore, the magnetic reluctance with regard to the current becomes to have a high magnetic reluctance ratio occupying the stator 1, and the difference in the magnetic reluctance within the stator 1 becomes small with relative to each other. As a result, the reluctance torque becomes small, and the output is decreased.

Page 32, lines 14-24, please amend the paragraph to read as follows:

a9

As described above, in the permanent magnet type reluctance electric motor according to the embodiment of the present invention, the stator 1 of the permanent magnet type reluctance electric motor according to this embodiment, is formed to satisfy a relationship of: $0.45 \leqq W_t/\tau \leqq 0.8$, where τ [m] indicates the pitch of the slot and W_t [m] indicates the width of the teeth (stator iron core teeth width). Thus, it becomes possible with a small size to perform a variable speed drive at a high output in a wide range from a low-speed to a high-speed rotation.

IN THE CLAIMS

Please amend Claims 1, 3, 4, 6 and 10 to read as follows:[2]

a10

1. (Amended) A permanent magnet type reluctance electric motor comprising:

a stator including a stator iron core and having armature coils placed inside slots; and

a rotor provided with a plurality of magnetic barriers formed by cavities and placed on an inner side of the stator in such a manner that sections where a magnetic flux can easily pass (d-axis) and sections where a magnetic flux cannot easily pass (q-axis) are alternately formed, and made of a rotor iron core having permanent magnets in cavities,

wherein the rotor satisfies a relationship of:

$PL/2\pi RW_{qave} \geqq 130$,

where W_{qave} (m) indicates an average thickness of the rotor iron core on an outer side in a radial direction of the rotor with respect to cavities arranged in a q-axis direction, L (m) indicates a width in a circumferential direction of the cavities, P indicates the number of poles and R (m) indicates the radius of the rotor.

[2]A marked-up copy of the changes made to the claims is attached.